

**Notice of Allowability**

Application No.

10/775,576

Applicant(s)

BAX ET AL.

Examiner

Charles D. Adams

Art Unit

2164

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address–

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the interview of 31 January 2008.
2. ☒ The allowed claim(s) is/are 2-7,9-14 and 16-39.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 1-31-08.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



CHARLES RONES  
SUPERVISORY PATENT EXAMINER

## EXAMINER'S AMENDMENT

### *Remarks*

1. In response to communications filed on 17 December 2007, claims 2-7, 9-14, and 16-21 are amended, claims 1, 8, and 15 are cancelled, and claims 22-39 are added per applicant's request. Claims 2-7, 9-14, and 16-39 are pending in the application.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Volejnicek on 31 January 2008.

3. **Please amend the specification as follows:**

Page 8, the first paragraph underneath the heading "DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS" should read:

"The process to identify among a list of texts those that have edit distance from a search string that is less than a threshold can be embodied in a system, wherein the system contains hardware, or in instructions stored in a computer readable storage medium, wherein a computer readable storage medium such as a memory and a disc, in which multiple search strings are to be the subject of the search; the search strings

may not be known a priori; the text list is known a priori, and one goal is to perform each search process quickly. The system preprocesses the text list once and then uses the preprocessed list for multiple search processes. Text list preprocessing is described first. Next, the search process is described. Then optional enhancements are described.”

**4. Please amend the claims as follows:**

**1. (Canceled)**

**2. (Previously presented)** The method of claim 3, further comprising:  
ordering the text list in a sequence to place text with shared prefixes adjacent to one another in the sequence.

**3. (Amended)** A computer-implemented method for identifying<sub>1</sub> in a list of texts<sub>1</sub> these texts whose edit distance from a search string is less than a threshold value, said method comprising:

- (a) obtaining by a computer the search string and the threshold value;
- (b) selecting by the computer a first text from the list of texts as a present computation text;

(c) computing by the computer, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the ~~step of~~ computing further comprises the steps of:

after an individual column is computed, identifying a range of rows of the grid extending from a first row that includes a cell of the individual column that has an edit distance value lower than the threshold value to a last row that includes a cell of the individual column that has an edit distance value lower than the threshold value;

in a next column, not computing the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to a border cell of the next column having an edit distance value at least equal to the threshold value;

in the next column, computing the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to ~~the~~ a border cell of the next column having an edit distance value lower than the threshold value;

in the next column, computing the edit distance values of the cells in rows of the grid that are in ~~this~~ the range and one higher; and

in the next column, computing the edit distance value of each of the individual cells in rows of the grid that are above ~~this~~ the range, based only on the edit distance value of a cell that is below each ~~the~~ individual cell, only until a cell with an edit distance value at least equal to the threshold value is computed;

(d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and the a computed edit distance from the present computation text to the search string being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text, wherein the next text ~~that~~ does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text~~;

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

4. **(Currently Amended)** A computer-implemented method for identifying, in a list of texts, ~~these~~ texts whose edit distance from a search string is less than a threshold value, said method comprising:

- (a) obtaining by a computer the search string and the threshold value;
- (b) selecting by the computer a first text from the list of texts as a present computation text;
- (c) computing by the computer, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to characters of the search string;
- (d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;
- (e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is less than the threshold value;
- (f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is not less than the threshold value;
- (g) in response to completing the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text, wherein the next text ~~that~~ does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list;

(l) making an alternative list of texts to an original said list of texts in which each occurrence in the texts of a character in a set of characters is replaced by a determined character in the set;

(m) in response to the search string lacking all characters in said set of characters, using the alternative list of texts rather than the ~~original~~ list of texts to identify those texts whose edit distance from the search string is less than the threshold value; and

(n) in response to the search string not lacking all characters in said set, using the ~~original~~ list of texts to identify those texts whose edit distance from the search string is less than the threshold value.

5. **(Currently Amended)** A computer-implemented method for identifying, in a list of texts, ~~these~~ texts whose edit distance from a search string is less than a threshold value, said method comprising:

- (a) obtaining by a computer the search string and the threshold value;
- (b) selecting by the computer a first text from the list of texts as a present computation text;
- (c) computing by the computer, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to characters of the search string, and wherein the ~~step of~~ computing comprises the steps of:

re-using a column of the grid of the a previous computation text for an individual column of the grid of the present computation text, in response to the present computation text not being a first said selected computation text and a preceding column of the grid of the present computation text having same edit distance values as a preceding column of the grid of the previous computation text, and at least one of the following conditions being true:

~~the a~~ character corresponding to ~~the~~ an individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text are both a same character and not a part of a prefix shared by the previous computation text and the present computation text,



the search string lacks the character corresponding to the individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text; and

otherwise computing the individual column of the grid of the present computation text;

(d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating by the computer an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting by the computer a next text, in the list after the present computation text, as the present computation text, wherein the next text ~~that~~ does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to any a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

6. **(Previously Presented)** The method of claim 3, further comprising:  
prior to step (b), sorting the texts in the list in lexicographical order.

7. **(Previously Presented)** The method of claim 3, wherein:  
computing comprises  
using dynamic programming to perform the computing.

8. **(Canceled)**

9. **(Previously Presented)** The system of claim 10, wherein the computer is operable to:

order the text list in a sequence to place texts with shared prefixed adjacent one to another in the sequence.

10. **(Currently Amended)** A system for identifying, in a list of texts, ~~these~~ texts whose edit distance from a search string is less than a threshold value, said system comprising:

a computer operable to

(a) obtain the search string and the threshold value;

(b) select a first text from the list of texts as a present computation text;

(c) compute, column-by-column, a grid of edit distance values between the search string and the present computation text;

wherein the computer is operable at step (c) to:

after an individual column is computed, identify a range of rows of the grid extending from a first row that includes a cell of the individual column that has an edit distance value lower than the threshold value to a last row that includes a cell of the individual column that has an edit distance value lower than the threshold value;

in a next column, not compute the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to a border cell of the next column having an edit distance value at least equal to the threshold value;

in the next column, compute the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to ~~the~~ a border cell of the next column having an edit distance value lower than the threshold value;

in the next column, compute the edit distance values of the cells in rows of the grid that are in ~~this~~ the range and one higher; and

in the next column, compute the edit distance value of each of the individual cells in rows of the grid that are above ~~this~~ the range, based only on the edit distance value of a cell that is below ~~the~~ each individual cell, only until a cell with an edit distance value at least equal to the threshold value is computed;

(d) stop the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, select a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, select a next text, in the list after the present computation text, as the present computation text, wherein the next text that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continue to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

**11. (Currently Amended)** A system for identifying<sub>1</sub> in a list of texts<sub>1</sub> ~~these~~ texts whose edit distance from a search string is less than a threshold value, said system comprising:

a computer operable to

(a) obtain the search string and the threshold value;

(b) select a first text from the list of texts as a present computation text;

(c) compute, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to characters of the search string;

(d) stop the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, select a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, select a next text, in the list after the present computation text, as the present computation text, wherein the next text that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, as the present computation text;

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any a~~ prefix shared by the previous computation text and the present computation text; and

(k) continue to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list;

(l) make an alternative list of texts to an original said list of texts in which each occurrence in the texts of a character in a set of characters is replaced by a determined character in the set;

(m) in response to the search string lacking all characters in said set of characters, use the alternative list of texts rather than the ~~original~~ list of texts to identify

those texts whose edit distance from the search string is less than the threshold value;  
and

(n) in response to the search string not lacking all characters in said set, use the original list of texts to identify those texts whose edit distance from the search string is less than the threshold value.

**12. (Currently Amended)** A system for identifying, in a list of texts, those texts whose edit distance from a search string is less than a threshold value, said system comprising:

a computer operable to

(a) obtain the search string and the threshold value;

(b) select a first text from the list of texts as a present computation text;

(c) compute, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to characters of the search string, and wherein the computer is operable at step (c) to:

re-use a column of the grid of the a previous computation text for an individual column of the grid of the present computation text, in response to the present computation text not being a first said selected computation text and a preceding column of the grid of the present computation text having same edit distance values as a preceding column of the grid of the previous computation text, and at least one of the following conditions being true:

the a character corresponding to the an individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text are both a same character and not a part of a prefix shared by the previous computation text and the present computation text,

the search string lacks the character corresponding to the individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text; and

otherwise compute the individual column of the grid of the present computation text;

(d) stop the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and the a computed edit distance from the present computation text to the search string being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generate an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, select a next text, in the list after the present computation text, as the present computation text;



(h) in response to stopping the computing, select a next text, in the list after the present computation text, as the present computation text, wherein the next text that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continue to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

**13. (Previously Presented)** The system of claim 10, wherein the computer is further operable to:

prior to step (b), sort the texts in the list in lexicographical order.

**14. (Previously Presented)** The system of claim 10, wherein the computer is adapted to use dynamic programming to compute the grid.

**15. (Canceled)**

16. **(Previously Presented)** The medium of claim 17, further containing instructions which cause the computer to perform:

ordering the text list in a sequence to place texts with shared prefixes adjacent to one another in the sequence.

17. **(Currently Amended)** A computer-readable storage medium containing instructions which, when executed by a computer, cause the computer to identify<sub>1</sub> in a list of texts<sub>1</sub> these texts whose edit distance from a search string is less than a threshold value, by performing steps comprising:

- (a) obtaining the search string and the threshold value;
- (b) selecting a first text from the list of texts as a present computation text;
- (c) computing, column-by-column, a grid of edit distance values between the search string and the present computation text;

wherein the instructions cause the computer to perform the ~~step of~~ computing by further performing steps comprising:

after an individual column is computed, identifying a range of rows of the grid extending from a first row that includes a cell of the individual column that has an edit distance value lower than the threshold value to a last row that includes a cell of the individual column that has an edit distance value lower than the threshold value;

in a next column, not computing the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to a border cell of the next column having an edit distance value at least equal to the threshold value;

in the next column, computing the edit distance values of the cells in rows of the grid that are below ~~this~~ the range, in response to ~~the~~ a border cell of the next column having an edit distance value lower than the threshold value;

in the next column, computing the edit distance values of the cells in rows of the grid that are in ~~this~~ the range and one higher; and

in the next column, computing the edit distance value of each of the individual cells in rows of the grid that are above ~~this~~ the range, based only on the edit distance value of a cell that is below ~~the~~ each individual cell, only until a cell with an edit distance value at least equal to the threshold value is computed;

(d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value, generating an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, selecting a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting a next text, in the list after the present computation text, as the present computation text, wherein the next text that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

**18. (Currently Amended)** A computer-readable storage medium containing instructions which, when executed by a computer, cause the computer to identify, in a list of texts, ~~these~~ texts whose edit distance from a search string is less than a threshold value, by performing steps comprising:

(a) obtaining the search string and the threshold value;

(b) selecting a first text from the list of texts as a present computation text;

(c) computing, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to characters of the search string;

(d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and the a computed edit distance from the present computation text to the search string being below the threshold value, generating an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, selecting a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting a next text, in the list after the present computation text, as the present computation text, wherein the next text that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, as the present computation text;

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list;

(l) making an alternative list of texts to an original said list of texts in which each occurrence in the texts of a character in a set of characters is replaced by a determined character in the set;

(m) in response to the search string lacking all characters in said set of characters, using the alternative list of texts rather than the original list of texts to identify those texts whose edit distance from the search string is less than the threshold value; and

(n) in response to the search string not lacking all characters in said set, using the original list of texts to identify those texts whose edit distance from the search string is less than the threshold value.

**19. (Currently Amended)** A computer-readable storage medium containing instructions which, when executed by a computer, cause the computer to identify, in a list of texts, those texts whose edit distance from a search string is less than a threshold value, by performing steps comprising:

(a) obtaining the search string and the threshold value;

(b) selecting a first text from the list of texts as a present computation text;

(c) computing, column-by-column, a grid of edit distance values between the search string and the present computation text, wherein the columns of the grid correspond to characters of the computation text and rows of the grid correspond to

characters of the search string, and wherein the instructions cause the computer to perform the ~~step of~~ computing by performing steps comprising:

re-using a column of the grid of ~~the~~ a previous computation text for an individual column of the grid of the present computation text, in response to the present computation text not being a first said selected computation text and a preceding column of the grid of the present computation text having same edit distance values as a preceding column of the grid of the previous computation text, and at least one of the following conditions being true:

~~the~~ a character corresponding to ~~the~~ an individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text are both a same character and not a part of a prefix shared by the previous computation text and the present computation text,

the search string lacks the character corresponding to the individual column of the grid of the present computation text and the character corresponding to the column of the previous computation text; and

otherwise computing the individual column of the grid of the present computation text;

(d) stopping the computing in response to computing a column whose minimum value of edit distance is at least the threshold value;

(e) in response to completing the computing and ~~the~~ a computed edit distance from the present computation text to the search string being below the threshold value,

generating an indication that the edit distance of the present computation text from the search string is less than the threshold value;

(f) in response to either stopping the computing, or completing the computing and the edit distance from the present computation text to the search string not being below the threshold value, generating an indication that the edit distance of the present computation text from the search string is not less than the threshold value;

(g) in response to completing the computing, selecting a next text, in the list after the present computation text, as the present computation text;

(h) in response to stopping the computing, selecting a next text, in the list after the present computation text, as the present computation text, wherein the next text that that does not share with the present computation text a prefix corresponding to columns of the grid up to and including the column whose minimum value of edit distance is at least the threshold value, ~~as the present computation text;~~

(i) in response to step (h) returning to step (c);

(j) in response to step (g), returning to step (c), but re-using in step (c) columns of the grid computed for previous said computation text that correspond to ~~any~~ a prefix shared by the previous computation text and the present computation text; and

(k) continuing to perform steps (c) through (j) until step (g) or step (h) reaches an end of the text list.

20. **(Previously Presented)** The medium of claim 17, further containing instructions which cause the computer to perform:



prior to step (b), sorting the texts in the list in lexicographical order.

21. **(Previously Presented)** The medium of claim 17, wherein the instructions cause the computer to perform the step of computing by using dynamic programming.

22. **(Previously Presented)** The method of claim 4, further comprising:  
ordering the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

23. **(Previously Presented)** The method of claim 4, further comprising:  
prior to step (b), sorting the texts in the list in lexicographical order.

24. **(Previously Presented)**. The method of claim 4, wherein:  
computing comprises  
using dynamic programming to perform the computing.

25. **(Previously Presented)** The method of claim 5, further comprising:  
ordering the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

26. **(Previously Presented)** The method of claim 5, further comprising:  
prior to step (b), sorting the texts in the list in lexicographical order.

27. **(Previously Presented)** The method of claim 5, wherein:

computing comprises

using dynamic programming to perform the computing.

28. **(Previously Presented)** The system of claim 11, wherein the computer is operable to:

order the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

29. **(Previously Presented)** The system of claim 11, wherein the computer is further operable to:

prior to step (b), sort the texts in the list in lexicographical order.

30. **(Previously Presented)** The system of claim 11, wherein:

the computer is adapted to use dynamic programming to compute the grid.

31. **(Previously Presented)** The system of claim 12, wherein the computer is further operable to:

order the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

32. **(Previously Presented)** The system of claim 12, wherein the computer is further operable to:

prior to step (b), sort the texts in the list in lexicographical order.

33. **(Previously Presented)**. The system of claim 12, wherein:

the computer is adapted to use dynamic programming to compute the grid.

34. **(Previously Presented)** The medium of claim 18, further containing instructions which cause the computer to perform:

ordering the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

35. **(Previously Presented)** The medium of claim 18, further containing instructions which cause the computer to perform:

prior to step (b), sorting the texts in the list in lexicographical order.

36. **(Previously Presented)** The medium of claim 18, wherein the instructions cause the computer to perform the step of computing by using dynamic programming.

37. **(Previously Presented)** The medium of claim 19, further containing instructions which cause the computer to perform:

ordering the text list in a sequence to place texts with shared prefixes adjacent one to another in the sequence.

**38. (Previously Presented)** The medium of claim 19, further containing instructions which cause the computer to perform:

prior to step (b), sorting the texts in the list in lexicographical order.

**39. (Previously Presented)** The medium of claim 19, wherein the instructions cause the computer to perform the step of computing by using dynamic programming.

***Allowable Subject Matter***

5. Claims 2-7, 9-14, and 16-39 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of all steps of the algorithm as claimed in the independent claims 3, 4, and 5. Specifically, the prior art of record does not show the method of determining edit distance based on a threshold by looking ahead to a subsequent and only partially calculating the subsequent column, as stated in independent claims 3, 10, and 17. The prior art of record does not show the method of using an alternative list of texts, wherein each occurrence in the original list of texts of a character is replaced by a determined character in the set, as stated in independent claims 4, 11, and 18. The prior art of record does not show the method of reusing columns depending on the existence of

shared characters in the previous and present computation texts, or on a search string lacking a character corresponding to a column of the grid of a present computation text, but not corresponding to the same column in a previous text, as stated in claims 5, 12, and 19.

The specification was amended to make clear that the system comprised hardware and that the computer readable storage medium was defined in such a manner that it was statutory. Although no computer readable storage medium was recited in the original application as filed, it was deemed that it was able to be entered and not new matter, as encoding instructions on memory or discs was well known to one of ordinary skill in the art to do so at the time of filing.

**Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Adams whose telephone number is (571) 272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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